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44 (new). A purified and isolated polynucleotide encoding an insoluble protein which has an apparent molecular weight of about 55 kilodaltons on a nonreducing SDS-polyacrylamide gel or insoluble fragment thereof, which protein or fragment binds human tumor necrosis factor.

45 (new). A polynucleotide of claim 44 which comprises the DNA sequence of Figure 1.

46 (new). A polynucleotide which is complementary to the DNA sequence of claim 44.

47 (new). A polynucleotide which hybridizes to the DNA sequence of claim 44.

48 (new). A polynucleotide which comprises two DNA subsequences, one of said subsequences encoding an insoluble protein which has an apparent molecular weight of about 55 kilodaltons on a nonreducing SDS-polyacrylamide gel or a soluble fragment thereof which protein or fragment is capable of binding human tumor necrosis factor, and the other of said subsequences encoding all of the domains of the constant region of the heavy chain of a human immunoglobulin other than the first domain of said constant region.

49 (new). A polynucleotide of claim 48 which comprises the DNA sequence of Figure 1.

50 (new). A polynucleotide which is complementary to the DNA sequence of claim 48.

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51 (new). A polynucleotide which hybridizes to the DNA sequence of claim 48.

52 (new). A polynucleotide of claim 48 wherein said human immunoglobulin is selected from the group IgG, IgM, IgA or IgE.

53 (new). A polynucleotide of claim 52 wherein said human immunoglobulin is IgG.

54 (new). A polynucleotide of claim 53 wherein said IgG is IgG1.

55 (new). A polynucleotide of claim 53 wherein said IgG is IgG3.

56 (new). A vector containing a polynucleotide of claim 44 which is capable of expressing protein encoded by said sequence in <sup>Smith</sup> prokaryotic and eukaryotic host systems.

57 (new). A prokaryotic or eukaryotic host system transformed <sup>Smith</sup> with the vector of claim 56.

58 (new). A host system of claim 57, wherein the host system <sup>Smith</sup> is an insect or a mammalian cell.

59 (new). A vector containing a polynucleotide of claim 48 which is capable of expressing the protein encoded by said sequence in prokaryotic and eukaryotic host systems.

60 (new). A prokaryotic or eukaryotic host system transformed with the vector of claim 59.